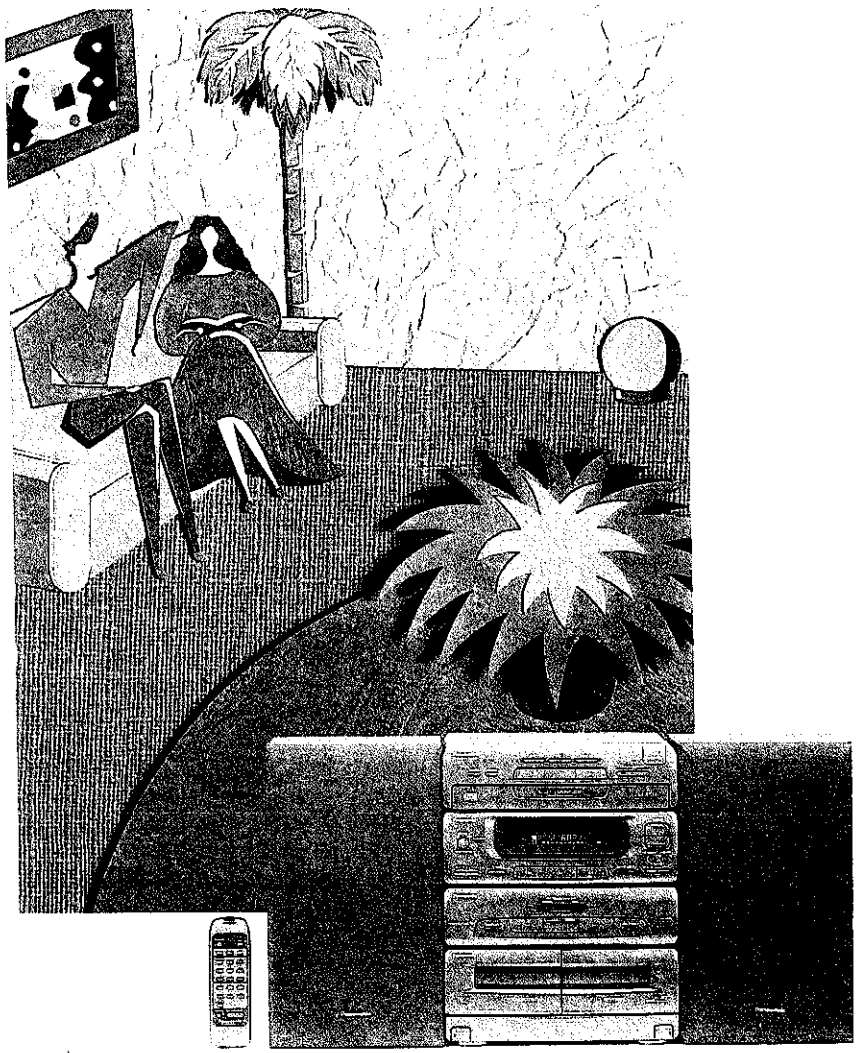
Panasonic®

CD Stereo System
SC-CH52

Operating Instructions



Before connecting, operating or adjusting this product,
please read these instructions completely.

COMPACT disc DIGITAL AUDIO

GN

RQT 3049-1L

Dear Customer

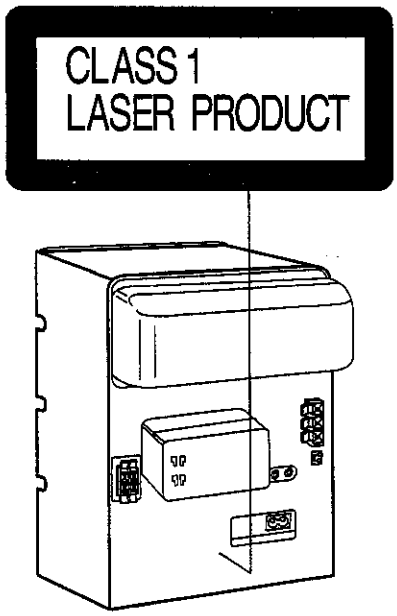
Thank you for purchasing this product.
For optimum performance and safety, please read these operating instructions carefully.

These operating instructions are applicable to the following systems.

System	SC-CH52
Main unit	SA-CH52
Speakers	SB-CH52

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

THIS MUSIC SYSTEM IS CAPABLE OF RECEIVING THE NEW AM STEREO BROADCASTS FROM THE AM BAND RADIO STATIONS. HOWEVER LIKE MANY MUSIC SYSTEM CURRENTLY AVAILABLE ON THE MARKET IT WILL REPRODUCE THIS AM STEREO SIGNAL ONLY IN AM MONO, WHICH, IN EFFECT, IS OF NO LESSER QUALITY THAN YOUR EXISTING AM MONO MUSIC SYSTEM.



DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.	(Inside of product)
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING. NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.	(Indersiden at apparatet)
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.	(Tuotteen sisällä)
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN	(Apparatens insida)
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.	(Produktets innside)
VORSICHT	UNSICHTBARE LASERSTRAHLUNG. WENN ABDECKUNG GEÖFFNET, NICHT DEM STRAHL AUSSETZEN.	(Im inneren des Gerätes)

Before use

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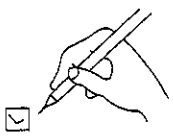
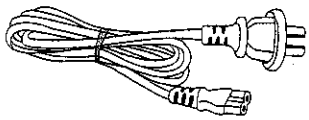
Supplied Accessories

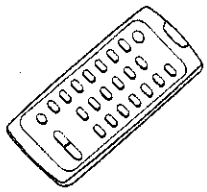


Please check and identify the supplied accessories.

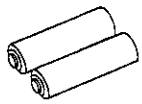
☐ AC power supply cord ..... 1 pc.



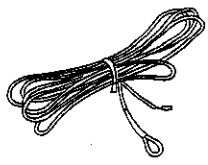
☐ Remote control transmitter ..... 1 pc.
(EUR643802)



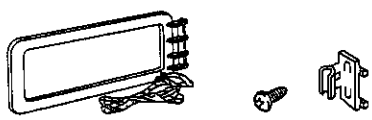
☐ Remote control batteries ..... 2 pcs.
(UM-4, "AAA" R03)



☐ FM indoor antenna ..... 1 pc.



☐ AM loop antenna ..... 1 pc.
☐ Antenna holder ..... 1 pc.
☐ Screw ..... 1 pc.



Suggestions for Safety

■ Use a standard AC wall outlet

1. **Use from an AC power source of high voltage, such as that used for an air conditioner, is very dangerous.**
   A fire might be caused by such a connection.
2. **A DC power source cannot be used.**
   Be sure to check the power source carefully, especially on a ship or other place where DC is used.

■ Grasp the plug when disconnecting the power supply cord

1. **Wet hands are dangerous.**
   A dangerous electric shock may result if the plug is touched by wet hands.
2. **Never place heavy items on top of the power supply cord, nor force it to bend sharply.**

■ Place the unit where it will be well ventilated

Place this unit at least 10 cm (4") away from wall surfaces, etc. Be careful that curtains and similar materials do not obstruct the ventilation holes.

■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.

In places where there is excessive vibration or humidity.

Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

■ Be sure to place the unit on a flat, level surface

If the surface is incline, a malfunction may result.

■ Never attempt to repair nor reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ Take particular care if children are present

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

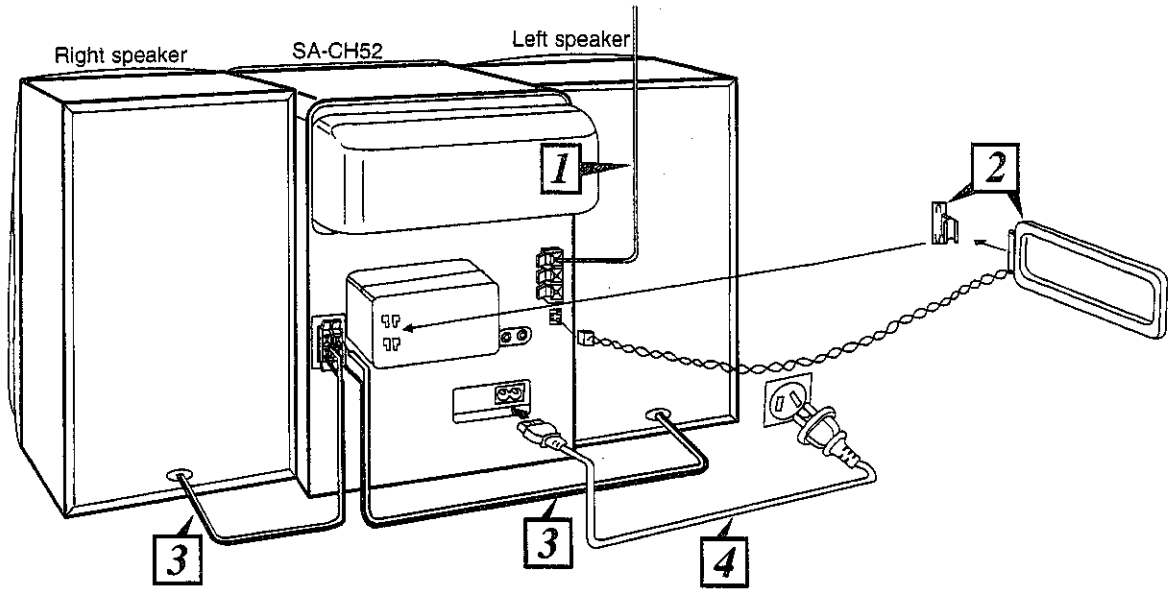
■ Disconnect the power supply cord if the unit will not be used for a long time

If the unit is left for a long time with the power ON, this not only will shorten its useful operation life, but also may cause other trouble.

■ If trouble occurs

If, during operation, the sound is interrupted or indicators no longer illuminate, or if an abnormal odour or smoke is detected, immediately disconnect the power cord plug, and contact with your dealer or an Authorized Service Center.

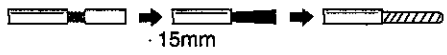
Connections

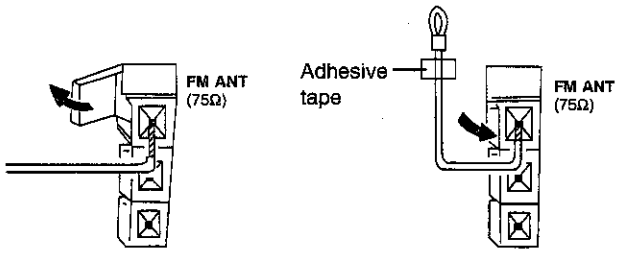


Connect the AC power supply cord after you have connected all other cables.

1 Connect the FM indoor antenna.

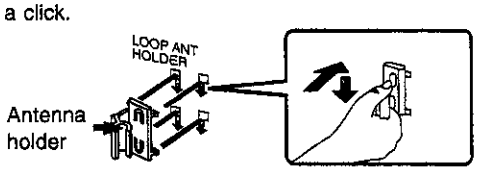
Install the antenna on a wall at a height and in a direction which result in the best reception.
The tip of the internal antenna wire should not come into contact with any metal objects.
When you cannot get a good reception with this FM indoor antenna, we recommend you to install an FM outdoor antenna (not included).



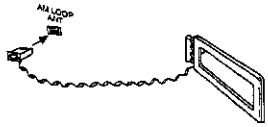


2 Connect the AM loop antenna

1. Attach the antenna holder to the rear panel. Press the antenna holder hard enough to get it fixed firmly in place, with a click.



2. Clamp the antenna to the antenna holder.
3. Connect the antenna terminal to the rear panel of the unit.



(After you have connected all cables)

4. While listening to a AM broadcast, position the loop antenna for the best reception.

You may attach the antenna holder to a rack or other structure. Use a screw (included) to attach as shown in the figure.

3 Connect the right (R) and left (L) speaker cables.

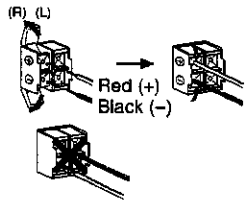
Notes

- Be sure to connect speaker cables before connecting the AC power supply cord.
- The load impedance of any speaker used with this unit must be 4Ω.

Connection of speaker cables:

1. Strip off the outer covering, and twist the center conductor.
   Make sure the bare ends of the wires are not unraveled. (If they are, twist them tight again.)

2. Insert the wire to the rear panel of the unit, and close the lever.



Notes

- To prevent damage to circuitry, never short-circuit positive (+) and negative (–) speaker wires.
- Be sure to connect only positive (+) wires to positive (+) terminals and negative (–) wires to negative (–) terminals.

Caution
Use this speaker only with the recommended system. Failure to do so may lead to damage to the amplifier and/or the speaker, and may result in the risk of fire. Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.

4 Connect the AC power supply cord after you have connected all other cables and cords.

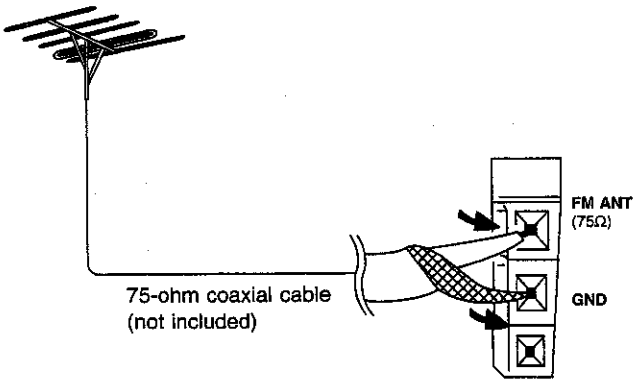
Optional antenna connections

You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.

FM outdoor antenna (not included)

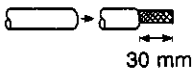
An outdoor antenna should be installed by a competent technician only.

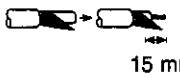
FM outdoor antenna (not included)

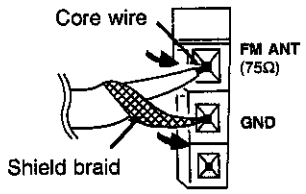


How to connect a 75-ohm coaxial cable: (FM outdoor antenna)

1. Remove a piece of the outer vinyl sheath from the end.
2. Bundle the shield braid, and remove a piece of the inner vinyl sheath covering the core wire.
3. Connect the core wire and the shield braid.

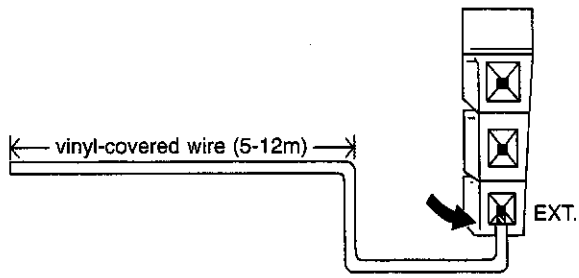






AM outdoor antenna (not included)

Connect the outdoor antenna without removing the AM loop antenna. Run 5 to 12 m of vinyl-covered wire horizontally along a window or other convenient location.



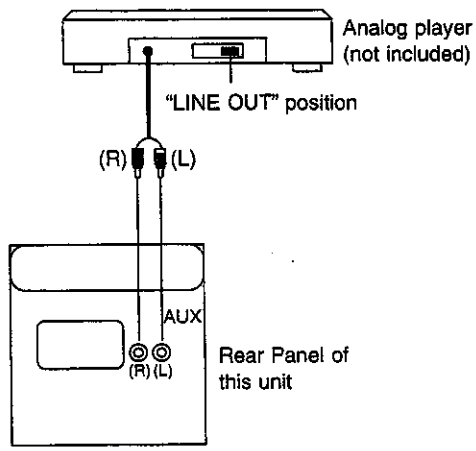
External unit connections

- For details, refer to the Operating Instructions of the units which are to be connected.
- When units other than those described below are to be connected, please consult with your audio dealer.

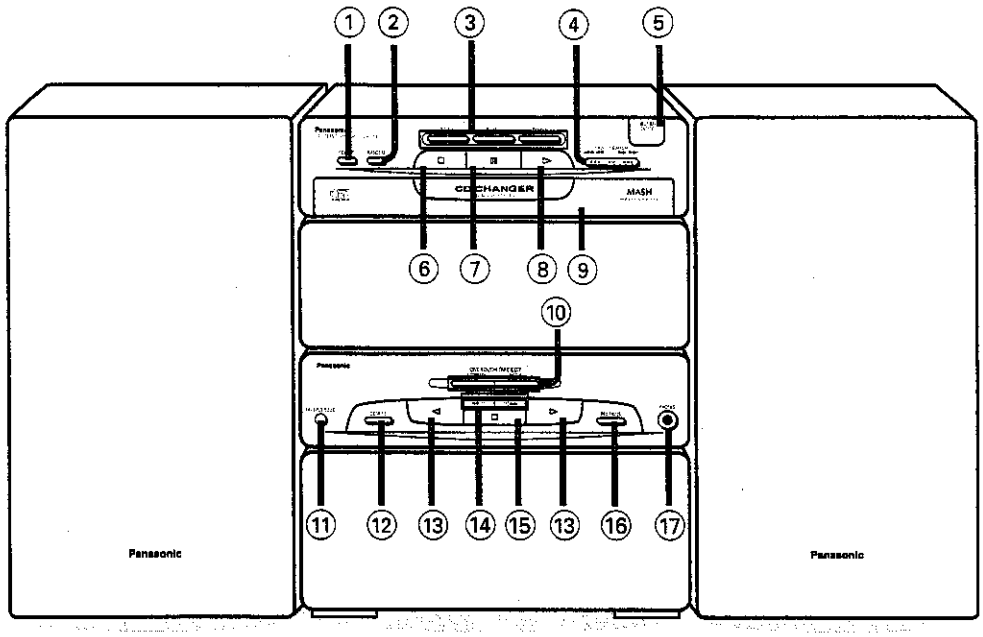
Analog player

Only an analog player with built-in phono equalizer can be connected.
This example shows how to connect the analog player with the PHONO OUT/LINE OUT switch.

Set the LINE OUT position at the back of the analog player.

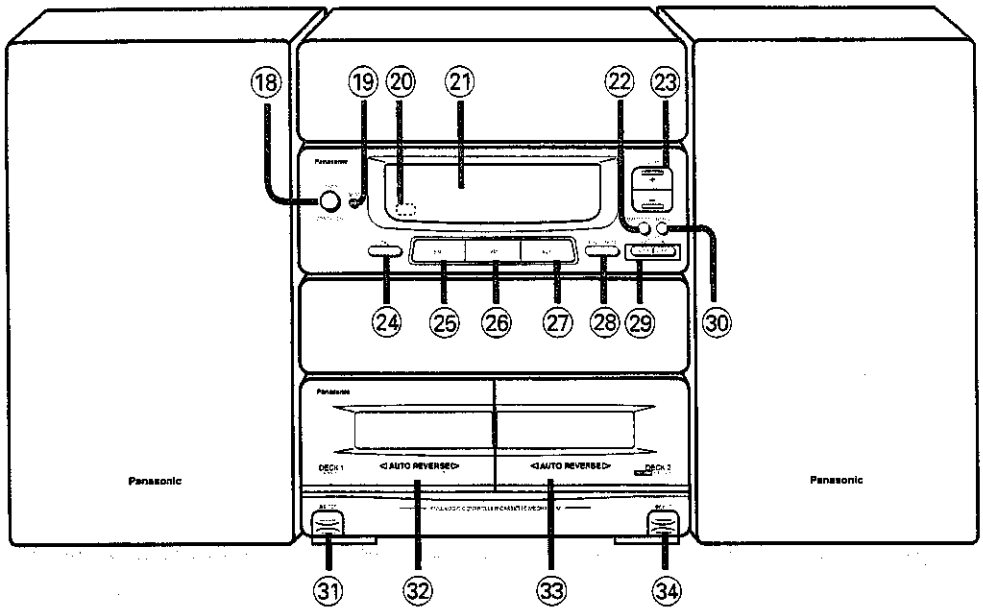


Location of Controls



No.	*Name*	*Ref. page*
①	Repeat button (REPEAT)	12
②	Random play button (RANDOM)	14
③	Disc buttons (DISC 1, DISC 2, DISC 3)	12
④	Skip/search buttons (I◄◄/◄◄, ►►/►►I)	12
⑤	Disc tray open/close button (▲ OPEN/CLOSE)	11
⑥	Stop button (□)	11
⑦	Pause button (▯▯)	11
⑧	Play button (►)	11
⑨	Loading drawer	11

No.	*Name*	*Ref. page*
⑩	One-touch tape edit buttons (NORMAL, HIGH)	20
⑪	Reverse mode button (REVERSE MODE)	15
⑫	Deck 1/deck 2 select button (DECK 1/2)	15
⑬	Playback buttons (◄, ►)	15
⑭	Fast forward/rewind/tape program sensor buttons (◄◄ (TPS), (TPS) ►►)	16
⑮	Stop button (□)	15
⑯	Record pause button (REC PAUSE)	18
⑰	Headphones jack (PHONES)	22



No.	Name	Ref. page
⑱	**Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)** Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.	11
⑲	**Standby indicator (STANDBY)** When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.	–
⑳	**Remote control signal sensor**	8
㉑	**Display section**	–
㉒	**FM mode/beat proof button (FM MODE/BP)**	10, 18
㉓	**Volume control button (VOLUME)**	10
㉔	**V. BASS button (V. BASS)**	22
㉕	**FM button (FM)**	9
㉖	**AM button (AM)**	9
㉗	**AUX button (AUX)**	21

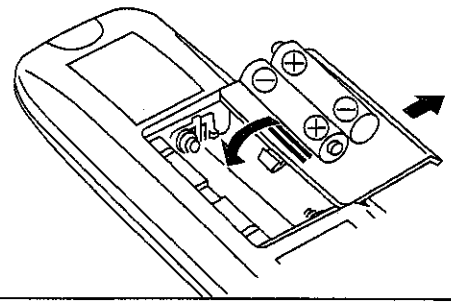
No.	Name	Ref. page
㉘	**Tuning mode select button (TUNING MODE)**	9
㉙	**Tuning buttons (∨ TUNING ∧)**	9
㉚	**Memory button (MEMORY)**	9
㉛	**Deck 1 holder open button (▲ EJECT)**	15
㉜	**Deck 1 cassette holder**	15
㉝	**Deck 2 cassette holder**	18, 19, 20
㉞	**Deck 2 holder open button (▲ EJECT)**	18, 19, 20

Concerning the Remote Control

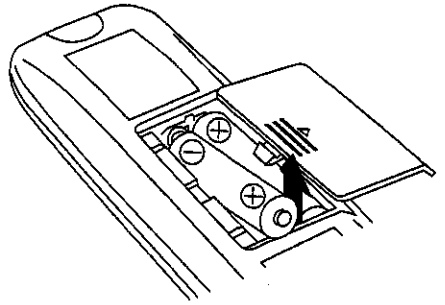
Battery installation

Insert two UM-4 "AAA", (1.5 V) or equivalent batteries.

Insert the batteries observing the correct polarities (⊕, ⊖)



To remove the batteries, pull out the ⊕ side.



Use of batteries

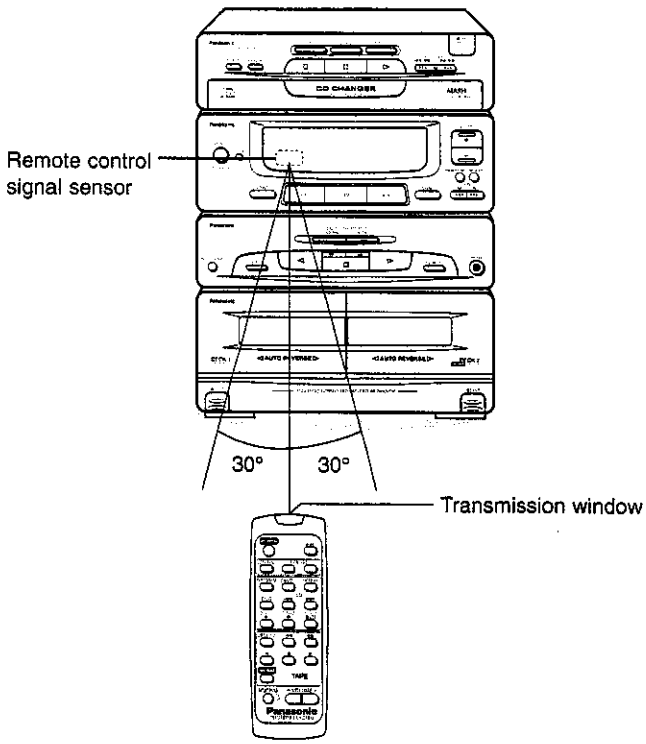
- Do not mix old and new batteries, or batteries of different types (manganese and alkaline, etc.).
- Never subject batteries to excessive heat or flame ; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the remote control is not to be used for a long period of time, remove the batteries and store them in a cool, dark place.
- Do not attempt to recharge alkaline or manganese batteries.

Battery life

The battery life is about one year.

The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when the transmitter is held close to the front panel.

Correct method of use



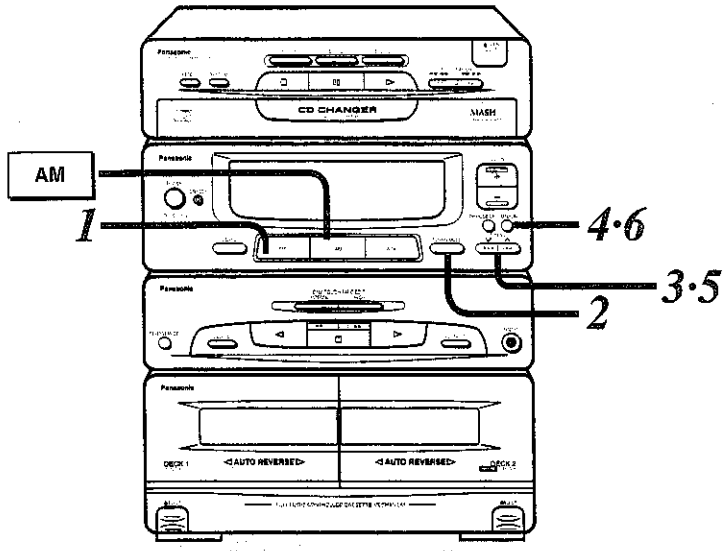
Face about 7 meters in front of the sensor.

Operation notes

- Aim the remote control's transmission window toward the unit's sensor. Avoid any obstacles.
- Be sure the transmission window and the unit's sensor are free from dust. Excessive dust might affect its performance.
- The operation may not be correct if direct sunlight or other strong light source strikes the receiving sensor of this unit. If there is a problem, place the unit away from the light source.
- If this system is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote control a shorter distance from the system.
- Never place heavy items.
- Do not disassemble or reconstruct.
- Do not spill water or other liquids.

Memory Presetting

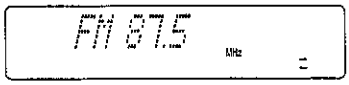
- If broadcast frequencies are preset in the memory, you can easily tune in any these of frequencies from the system or remote control unit.
- Up to 10 stations can each be set in the FM and AM bands with the memory presetting.



This example in the figure shows how to preset stations in the FM band. (FM 88.1 MHz in preset channel 3)

1 FM

Press FM.
The power will be automatically on.

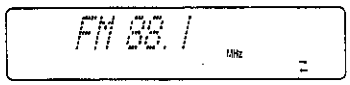


2 TUNING MODE

Press TUNING MODE to select "MANUAL".
Each time you press the button, "MANUAL" and "PRESET" will appear alternately.

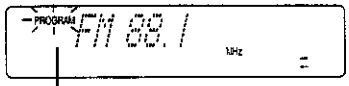
3 TUNING ∨ ∧

Press ∨ or ∧ to select the desired frequency.
FM stations can be selected automatically (see right).



4 MEMORY

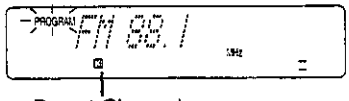
Press MEMORY.



Flashes

5 TUNING ∨ ∧

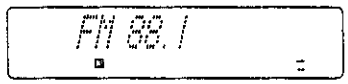
Press ∨ or ∧ to select the preset channel.



Preset Channel

6 MEMORY

While PROGRAM is flashing, Press MEMORY.



7

Repeat steps 3 to 6 to preset the other stations.

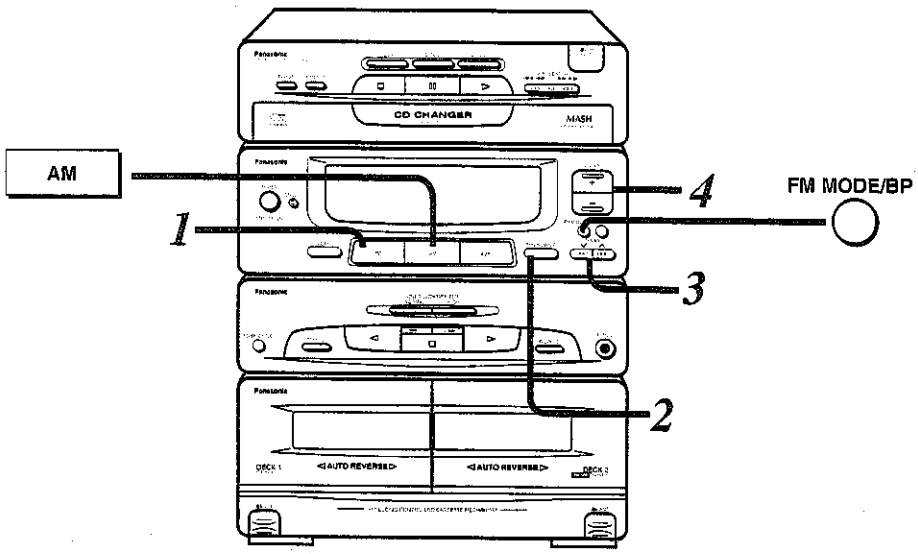
To preset stations in the AM band:

1. Press AM
2. Perform steps 2–7.

Selecting FM stations automatically:

Keep pressing ∨ or ∧ until the frequency display starts to change. A station with good reception is automatically selected and the selection process then stops.

Listening to Preset Stations (Preset Tuning)



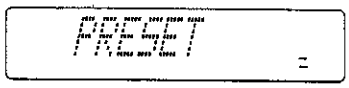
Be sure you've completed the steps of "Memory presetting" on page 9.
This example in the figure shows how to listen to FM preset channel 3;

1 FM

Press FM.
The power will be automatically on.

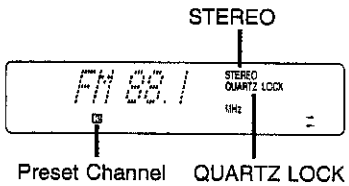
2 TUNING MODE

Press TUNING MODE to select "PRESET".
Each time you press the button, "MANUAL" and "PRESET" will appear alternately.



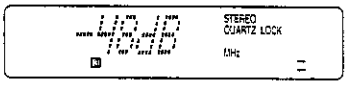
3 TUNING ∨ ∧

Press ∨ or ∧ to select the preset channel.
"STEREO" lights when an FM stereo broadcast is being received. "QUARTZ LOCK" lights when you precisely tune in a broadcast station.



4 VOLUME + −

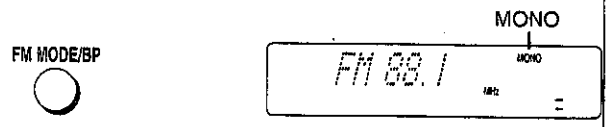
Press VOLUME to adjust the volume as you like.



Manual tuning (When stations have not been preset):

1. Press FM or AM.
2. Press TUNING MODE to select "MANUAL"
   Each time you press the button, ,"MANUAL" and "PRESET" will appear alternately.
3. Press ∨ or ∧ to tune in the desired broadcast.
4. Press VOLUME to adjust the volume as you like.

Switching the mode from stereo to monaural while listening to an FM station: Press FM MODE/BP.



The sound reception mode switches to "MONO" (monaural) when the FM MODE/BP button is pressed.
When "MONO" indicator goes off:
Use this setting for normal listening. Both stereo and monaural sounds can be heard as they are.
When "MONO" indicator lights up:
Use this setting when listening to or our recording in monaural. All sound reception including stereo sound, is in monaural.

For your reference:

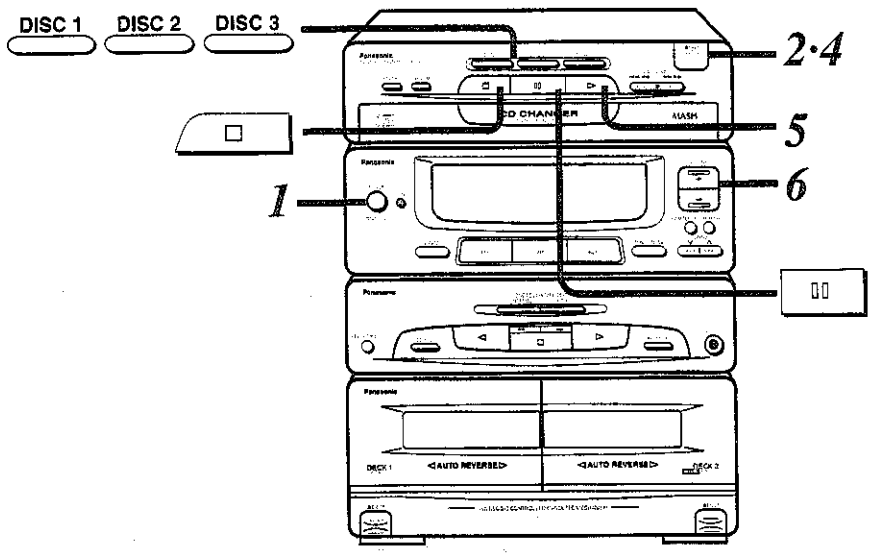
If too much noise is produced in the FM stereo mode, press FM MODE/BP and check "MONO" lights up.
The sound will then be heard in monaural. If the broadcast signal is weak, or if there is a large amount of interference, you will get a clearer sound in "MONO" mode.

Note

You cannot memorize the stations in "MONO" mode.

Listening to Compact Disc

Sequential play



1 POWER

STANDBY⏻/ON

Switch on the power.

2 ▲ OPEN/CLOSE

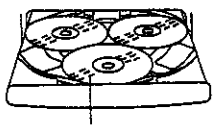
Press ▲ OPEN/CLOSE to open the loading drawer.

3

Load the CD on each disc tray with label facing upward.

Do not load 8 cm and 12 cm disc on the same disc tray.

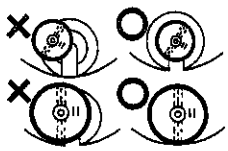
Place a CD as shown in the figure.



Label must face up.

8 cm CD

12 cm CD



4 ▲ OPEN/CLOSE

Press ▲ OPEN/CLOSE to close the loading drawer.

5 ►

Press ►.

Disc play begins from the first track on the first disc.

Play stops automatically when the last track on the last disc finishes playing.

6 VOLUME +/−

Press VOLUME to adjust the volume level as you like.

To stop the disc play:

Press □.

To temporarily stop the disc play:

Press ▯▯.

To play again, press ►.

When " ⩾ " appears on the display:

It indicates there are 11 or more tracks on the disc at the playing position.

When "NO DISC" appears on the display:

It indicates there are no disc loaded on the disc tray.

Concerning the total playing time on the display:

The total play time including the gaps between the tracks is indicated. This is why the time may be several seconds longer than the figure given in the liner notes, etc.

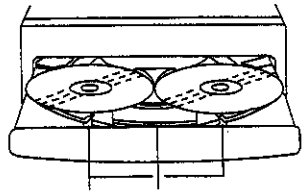
For your reference:

If you press ► instead of ▲ OPEN/CLOSE after inserting disc(s), the loading drawer will close and play will start directly.

Note

Avoid the following things to prevent the malfunction or incorrect operation.

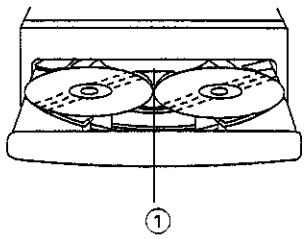
- Do not push the loading drawer to close.
- Do not cover the hole or slits.
- Do not turn the tray forcibly by hand because it may fail to operate normally.
- Do not move this changer with a compact disc inside the unit. If a disc comes off the disc tray, it might be scratched or the changer might become incapable of playing.



Slits Hole

To change discs during play

While a disc is playing, you can change disc.
1. Press ▲ OPEN/CLOSE during playing.
   The loading drawer will open at half position.
2. Change the discs.
3. Press ▲ OPEN/CLOSE again to close the loading drawer.



Notes

- Do not insert another disc onto tray placed at ①. Although the tray is partially showing, its disc is in the play position.
- To open fully, follow the procedure below.
  1. Press □.
  2. Press ▲ OPEN/CLOSE to close the loading drawer.
  3. Press ▲ OPEN/CLOSE again to open the drawer.

For your reference:
If you play a disc with the loading drawer open, the changer will automatically stop when the last track on the current disc finishes playing.

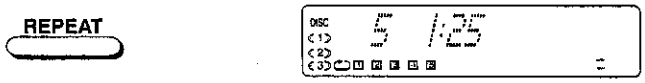
To select the desired disc

Press DISC 1, DISC 2 or DISC 3 to select the disc which you want to play.
The play will automatically start from the first track of the disc you select.

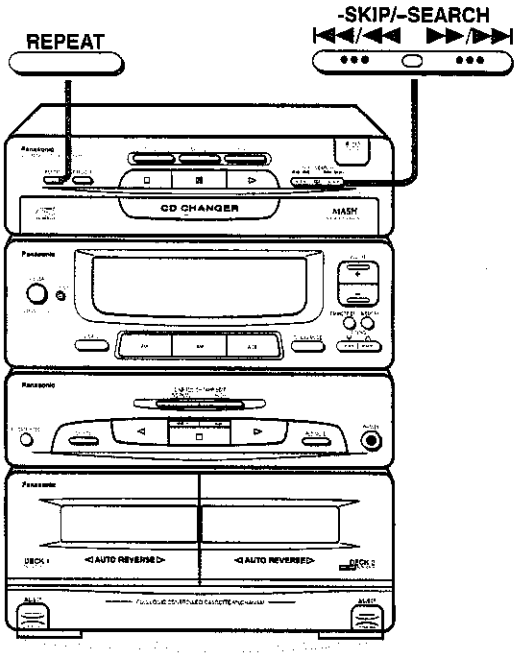
Repeat function

This function repeats the play of all tracks on the loaded disc.

Press REPEAT before or during play.



To repeat the same track over and over/
To repeat the programmed tracks
1. Select the desired track using the program play procedure on page 13.
2. Press REPEAT to display " ↻ ".
3. Press ▶.



Skip function

Press either I◀◀/◀◀ or ▶▶/▶▶I until you reach the desired track.
▶▶/▶▶I: To skip forward
You can skip as many tracks as the number of times you press the button.
I◀◀/◀◀: To skip backward
You can skip to the beginning of the track being played. If you press this button again quickly, you can skip to the beginning of the previous track.
Note that in a backward skip, the current track is included in the count.

For your reference:
In program play mode, you can skip only the programmed tracks. (See page 13.)

Note

In random play mode, you cannot skip to the previous track. (See page 14.)

Search function

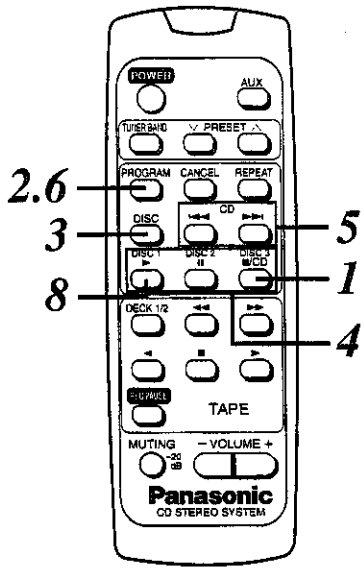
You can rapidly search forward or backward on the disc for specific sections.

While in play mode, press and hold either I◀◀/◀◀ or ▶▶/▶▶I. Release the button when you have reached the desired point.
▶▶/▶▶I: To search forward
I◀◀/◀◀: To search backward

For your reference:
During program play and random play, search will take place within the track being played.

Program play

This function allows you to program up to 24 tracks from the loaded disc(s) in any order you choose.



From the remote control

This example shows how to program track 8 of disc 2.

1 DISC 3 ■/CD

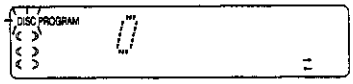
Press ■/CD.

2 PROGRAM

Press PROGRAM.

3 DISC

Press DISC.



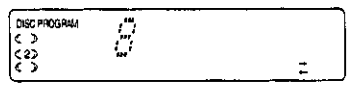
4 DISC 1 ► DISC 2 II DISC 3 ■/CD

Press one of the disc buttons (DISC 1–3) to select the disc.

When you do not press DISC before pressing these buttons, these buttons are used as ► (play), II (pause), and ■/CD (stop/CD selector) buttons.

5 |◄◄ ►►|

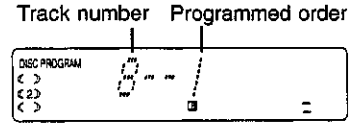
Press |◄◄ or ►►| to select the track you want to play.



6 PROGRAM

Press PROGRAM.

Track number Programmed order



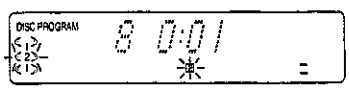
7

Repeat steps 3–6 until you have completed the program.

8 DISC 1 ►

Press ► to start play.

Play will stop automatically when the last program track finishes playing.

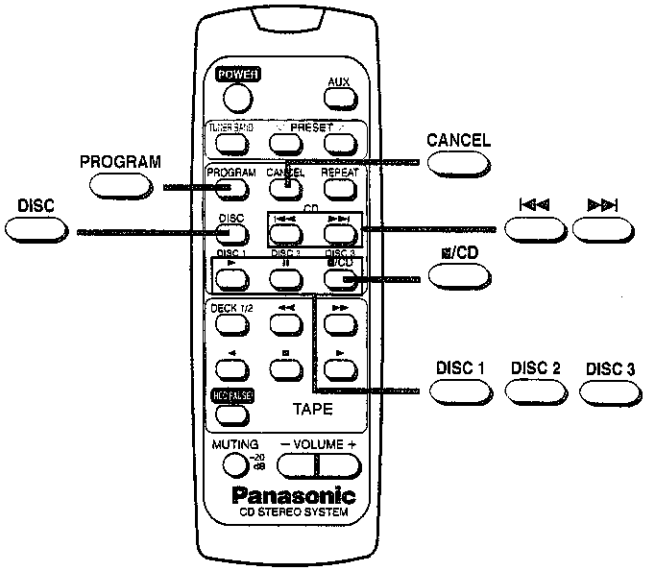


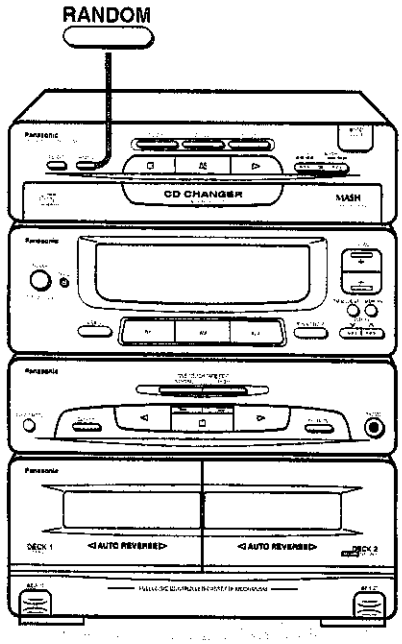
To cancel program play:

Press PROGRAM.

The compact disc changer resumes sequential play mode.

Listening to Compact Disc





From the main unit

1. Press MEMORY.
2. Press one of the disc button (DISC 1–3) to select the disc.
3. Press ⏮ or ⏭ to select the track.
4. Press MEMORY.
5. Repeat steps 2-4 until you have completed the program.
6. Press ▶.
   Play will stop automatically when the last program track finishes playing.

When "CD FULL" appears:

This indicates that an attempt has been made to program more than 24 tracks. No more than 24 tracks can be programmed.

To add an entry:

1. Press DISC.
2. Press one of the disc buttons (DISC 1-3).
3. Press ⏮ or ⏭ to select the track to be added.
4. Press PROGRAM.

To clear a programmed track one by one:

(Available only from the remote control)

1. Press CANCEL. "CANCEL" lights.
2. Press one of the disc buttons (DISC 1-3).
3. Press ⏮ or ⏭ repeatedly until the display shows the track number you want to cancel.
4. (Within 10 seconds)
   Press CANCEL.
5. Repeat steps 2 to 4 to finish cancelling track.
6. Press CANCEL.
   "CANCEL" will go off.

To clear all tracks:

Press ■/CD once in the stop mode or twice in the play mode.

Note

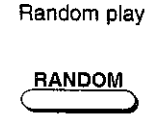
In random play mode, you cannot add or clear a track.

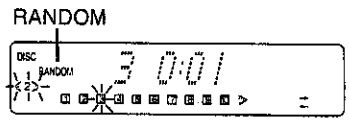
Random play

The changer will randomly choose a track from a randomly selected disc.

Press RANDOM.

Random play will start.





The changer will stop automatically when all tracks on all the loaded discs have been played.

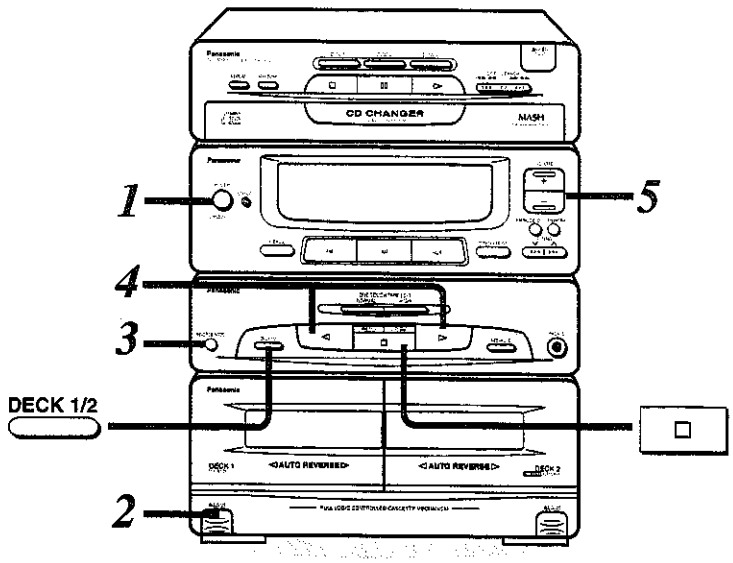
To cancel random play, press RANDOM once again.
The compact disc changer resumes the sequential play mode.

For your reference:

In the program play mode, the programmed tracks will be played randomly. (See page 13.)

Listening to Tape

Playback



- You can use normal, chrome and metal tapes.
- You can use either deck 1 or deck 2 for tape playback.
- This page shows an example using deck 1.

1 POWER

STANDBY⏻/ON

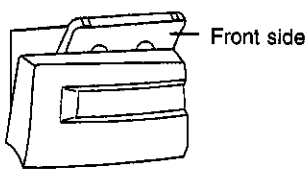
Switch on the power.

2 ▲ EJECT

Press ▲ EJECT on deck 1, and then insert the tape.

Insert the tape with the exposed tape facing down.

Close the cassette holder.



3 REVERSE MODE

Press REVERSE MODE to select the reverse mode.

Each time you press REVERSE MODE, one of the indicators will light up.

⇄ : The deck plays one side only, and then stop automatically.

⇄): The deck plays both sides, and then stops automatically.

(⇄): The deck plays both sides 8 times, and then stop automatically.

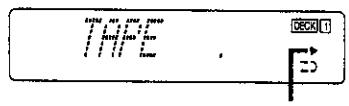
When you load tapes into both decks; sequential playback will be made. (See page 16)

4 ◄ ►

Press ◄ or ►.

►: The forward side (front side) will play.

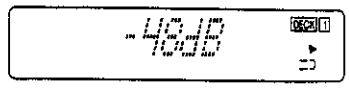
◄: The reverse side will play.



Tape travel direction

5 VOLUME

Press VOLUME to adjust the volume level as you like.



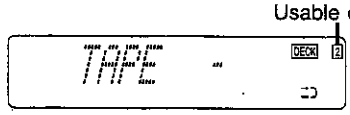
To stop tape playback:

Press □.

When tapes are inserted in both decks:

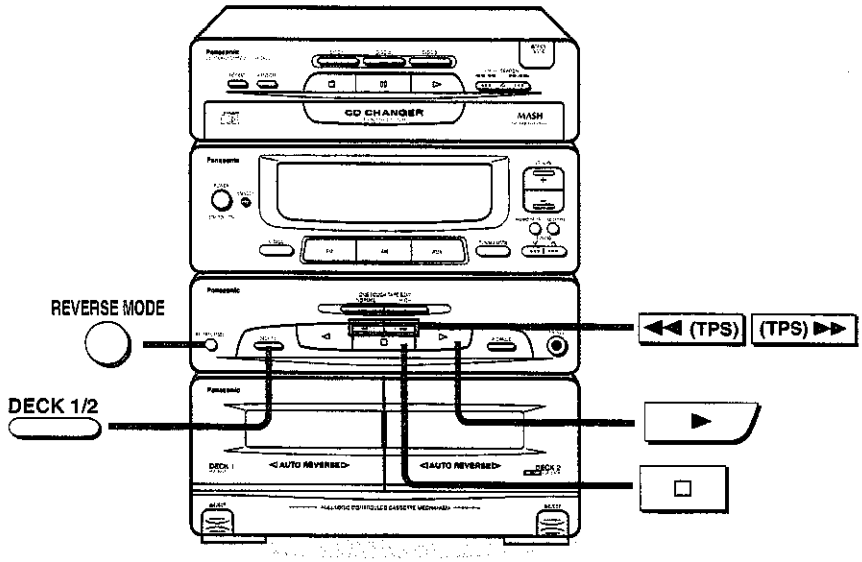
Before proceeding step 4, press DECK 1/2 to select the deck you want to play.

Usable deck



For your reference:

The deck automatically identifies the type of tape loaded.



To find the beginning of a program (TPS: Tape Program Sensor)

Press ◀◀ or ▶▶ while the tape is playing.

If the forward side (▶) is playing:
▶▶: The tape will play from the beginning of the next tune.
◀◀: The tape will rewind to the beginning of the present tune. Then the tune will play again.

If the reverse side (◀) of the tape is playing:
The reverse operation should take place.

Note

TPS is the function that searches for the silent passage in a tape program. So, it may sometimes fail to operate correctly in the following situations:

- When there is no blank space between tape programs (for example, a tape recorded from a microphone)
- When the interval between programs is less than 4 seconds
- When there is a particular low-level passage in a program (for example, classical music)
- When the program is less than 10 seconds, or when it is less than 10 seconds from the beginning of the program to the beginning of the next program
- When a tape recorded with fade-ins or fade-outs

To fast forward or rewind the tape

Press ◀◀ or ▶▶ while the tape is in the stop mode.

▶▶: The tape will be fast forwarded.
◀◀: The tape will be rewound.

For your reference:

You can fast forward or rewind the tape while you are playing a tape in another deck. Press DECK 1/2 to switch to the non playing deck, and then press ◀◀ or ▶▶. After above operation, be sure to press DECK 1/2 to select the deck in which you are playing a tape.

Sequential playback among 2 tapes:

1. Press ⏏ EJECT on decks 1 and 2, and then insert the tapes. Insert with the side that you wish to listen to first facing in you deck 1.
2. Press REVERSE MODE to select "⟲" mode.
3. Press DECK 1/2 to select deck 1. "DECK 1" will light up.
4. Press ▶.

Forward side of tape in deck 1 ↓ Reverse side of tape in deck 1 ↓ Forward side of tape in deck 2 ↓ Reverse side of tape in deck 2 → (back to Forward side of tape in deck 1)

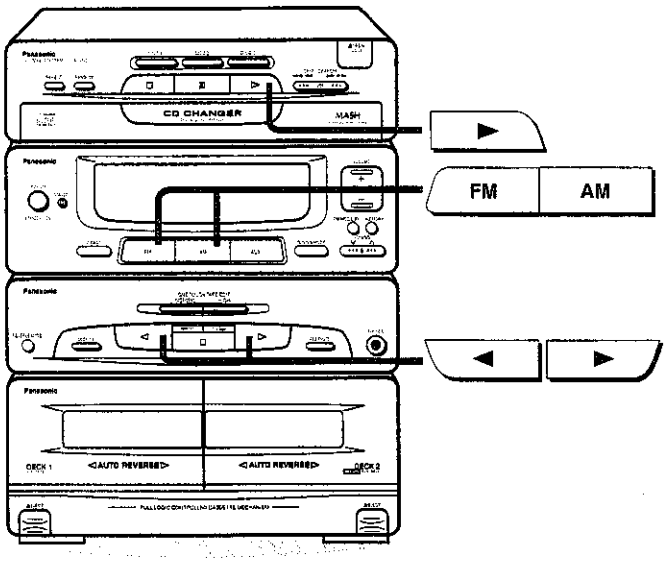
After repeating above operation 8 times, the tape will automatically stop.

To stop tape playback:
Press □.

For your reference:
You can also start playback from a position other than the forward side in deck 1.

About "DECK 1/2" indicator
When you load tapes in both decks, deck 1 or 2 indicator will light to show which deck you loaded last.
When you switch on the power when two tapes are loaded in both decks, "DECK 1" will light.

Convenient Functions



Easy play

(Also available from the remote control)

From the power standby condition, you can start play directly.

Listening to compact disc

Press ►.
The play will start from the first track.

Listening to radio broadcasts

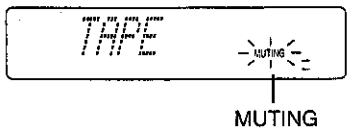
Press FM or AM.
You can receive the station last tuned in.

Listening to tape

Press ◄ or ►.
When tapes have been loaded in both decks, deck 1 has priority.

To mute the volume

(Only available from the remote control)
Press MUTING.
"MUTING" will light.
This feature is convenient when you have a telephone call, etc.
To cancel, press MUTING once again.



MUTING

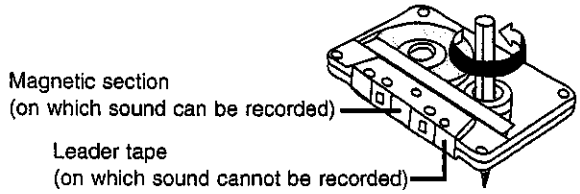
For Your Recording

Concerning cassette tapes:

You can use normal and chrome tapes for recording. The deck automatically identifies the kind of tape loaded, and set the bias (for recording), recording level, equalization accordingly.

To take up the leader tape:

The leader tape is the first few revolutions that you cannot record on.



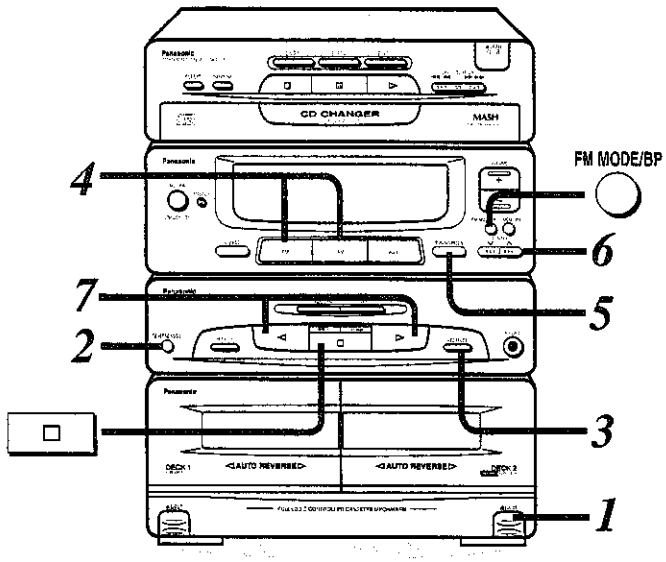
Concerning the volume level while recording:

The deck automatically sets the recording level. If you change the volume level while recording, it does not affect the recording volume level.

To erase a recorded sound:

1. Press □ button on the cassette deck section to select "TAPE".
2. Insert the recorded tape into deck 2.
3. Press REVERSE MODE to select reverse mode.
4. Press REC PAUSE.
5. Press ◄ or ► corresponding to the tape side you want to erase.

Recording from Radio Broadcasts



- You can use normal and chrome tapes.
- Check that the tape's tabs (see page 25) are intact.
- The leader tape must be wound up before-hand. (See page 17)

1 ▲ EJECT

Press ▲ EJECT on deck 2, and then insert the tape.
Close the holder.

2 REVERSE MODE

Press REVERSE MODE to select the reverse mode.
- ⇄ : One side will record, and then the tape will stop automatically at the tape end.
- ⇄› : Both sides will record (forward side → reverse side), and then the tape will stop automatically at the tape end.
- ‹⇄› : Same as above. (When you press REC PAUSE, "‹⇄›" will be automatically switched over to "⇄›".)

3 REC PAUSE

Press REC PAUSE to put the cassette deck into the recording standby mode.
"REC" will light.

4 FM / AM

Press FM or AM to select the band.

5 TUNING MODE

Press TUNING MODE to select "PRESET".
You can also tune in using "MANUAL" mode.

6 TUNING ∨ ∧

Press ∨ or ∧ to select the preset channel.

7 ◄ ►

Press ◄ or ► to start recording.
- ►: When recording on either the forward side or both sides.
- ◄: When recording only the reverse side.

To stop recording:
Press □.

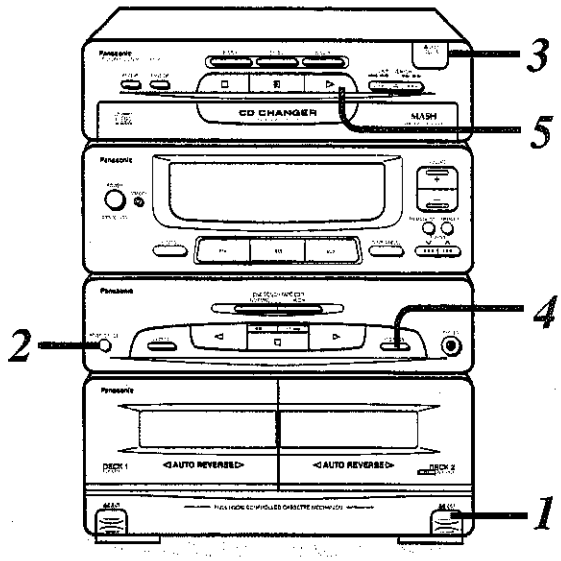
To cut an unnecessary part while recording:
1. Press REC PAUSE.
   The cassette deck will go into the recording standby state.
2. To resume recording, press ◄ or ► corresponding to the direction in which recording is taking place.

To reduce the noise while AM recording (Beat proof function)

While in the recording standby mode of AM band;

Press FM MODE/BP.
Each time you press the button, BP 1 and BP 2 will be displayed alternately.
Select the position where there is less noise.

Recording from Compact Discs



- You can use normal and chrome tapes.
- The leader tape must be wound up before-hand. (See page 17)

1 ▲ EJECT

Press ▲ EJECT on deck 2, and then insert a tape.
Close the holder.

2 REVERSE MODE

Press REVERSE MODE to select the reverse mode.
⇄ : One side will record, and then the tape will stop automatically at the end.
⇄› : Both sides will record (forward side → reverse side), then the tape will stop automatically at the tape end.
‹⇄› : Same as above (When you press REC PAUSE, "‹⇄›" will be automatically switched over to "⇄›").

3 ▲ OPEN/CLOSE

Press ▲ OPEN/CLOSE to load a CD.
When you record from one disc:
Load a CD on the disc tray 1.
When you record from two or three disc:
Load a disc from which you want to record first on the disc tray 1, and in order 2, 3.

Press ▲ OPEN/CLOSE again to close the tray.

4 REC PAUSE

Press REC PAUSE to put the cassette deck into the recording standby mode.
"REC" will light.

5 ►

Press ►.
The recording will automatically start in the "►" (forward side) direction.
When CD play finishes, the cassette deck enters the recording standby condition.

After the compact disc play finishes:

When one disc is loaded:
The cassette deck will create a non-recorded passage of about 4 seconds, and then go into the recording standby state.

When two or three disc are loaded:
When there is a blank portion on the tape, the deck will automatically start recording from the next compact disc.

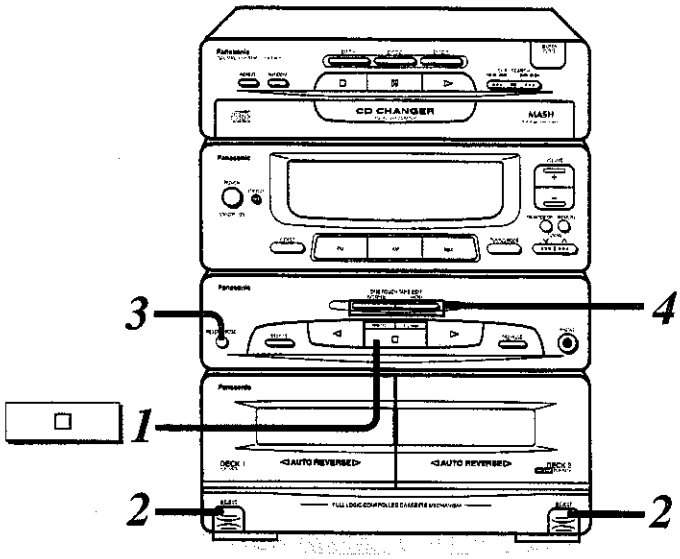
To specify the tracks to be recorded:

(Steps 2-7 are from the remote control)
1. Follow steps 1 to 4.
2. Press PROGRAM.
3. Press DISC.
4. Press one of the disc buttons (DISC 1–3) to select the disc.
5. Press ⏮ or ⏭ to select the track to be edited.
6. Press PROGRAM.
7. Repeat steps 3–6 to program discs and tracks such that the total playing time is less than the length of the tape (up to 24 tracks).
8. Press ► on the CD changer to start recording.

The recording will automatically start.

Tape to Tape Recording

- You can use normal and chrome tapes.
- The recording level and the noise reduction effect of the original (playback) tape will be recorded on the new tape.
- The leader tape must be wound up beforehand. (See page 17.)



1 □

Press □ to select "TAPE".

2 ▲EJECT ▲EJECT

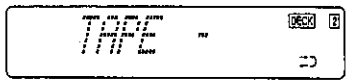
Press ▲ EJECT on both decks, and then insert the tapes.

For playback: Into deck 1
For recording: Into deck 2
Close each deck's holder.

3 REVERSE MODE

Press REVERSE MODE to select the reverse mode.

⇄ : Single-sided recording
⇄⊃ : Two-sided recording
(forward side → reverse side)
⊂⇄⊃ : Same as above (When you press NORMAL or HIGH, "⊂⇄⊃" will be automatically switched over to "⇄⊃").

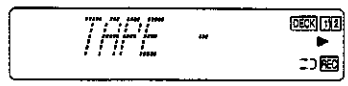


4 ONE TOUCH TAPE EDIT NORMAL HIGH

Press NORMAL or HIGH of ONE TOUCH TAPE EDIT to start recording.

NORMAL: Normal speed recording
HIGH: High speed (about 2 times normal speed) recording

The recording will start from the forward side "▶" automatically. The tape travel direction indicator shows the tape travel direction of the tape for recording.
After recording has finished, both decks will stop.



Both "DECK 1" and "DECK 2" indicator light.
When the tape length in deck 2 is longer than a tape in deck 1, the deck enters the recording standby state.

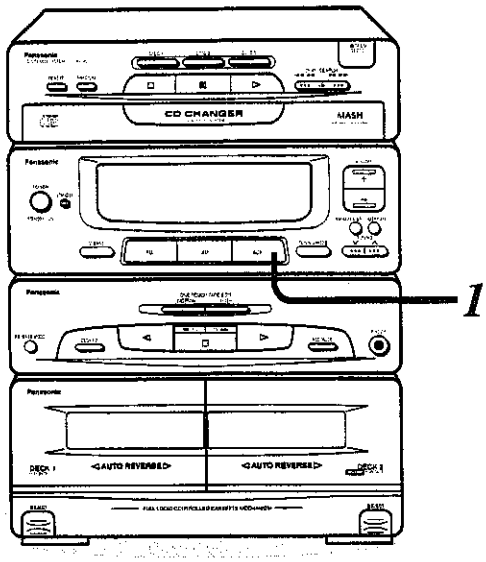
To stop recording:

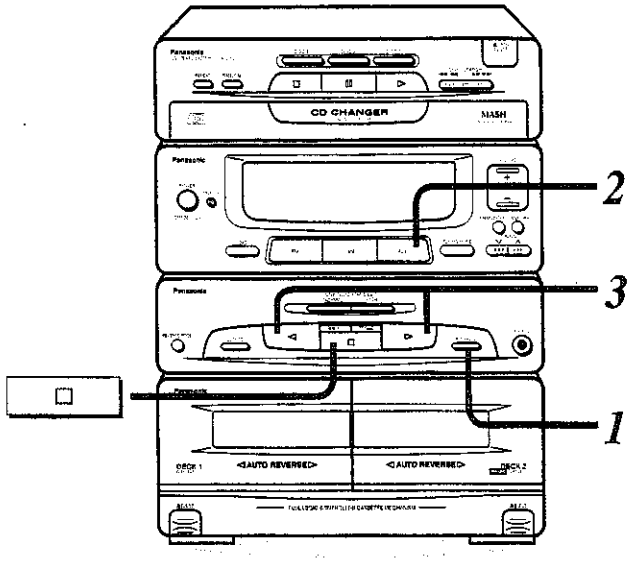
Press □.
Both decks will stop.

Note

While making a high-speed recording, install the visual unit such as a TV further away from this unit. It prevents noises from being recorded.

Using an External Unit



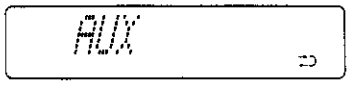


Listening to an external source

(See page 5 for external unit connection)

1 AUX

Press AUX.



2

Operate the unit which is connected to the system.

See the instruction manual of the unit concerned for the operation.

Recording from an external source

1 REC PAUSE

Press REC PAUSE.

2 AUX

Press AUX.

3 ◄ ►

Press ◄ or ► to start recording.

►: Recording will start from the forward side

◄: Recording will start from the reverse side

4

Start playing the source to be recorded.

See the instruction manual of the unit concerned for the operation.

To stop recording:

Press □ on the cassette deck section.

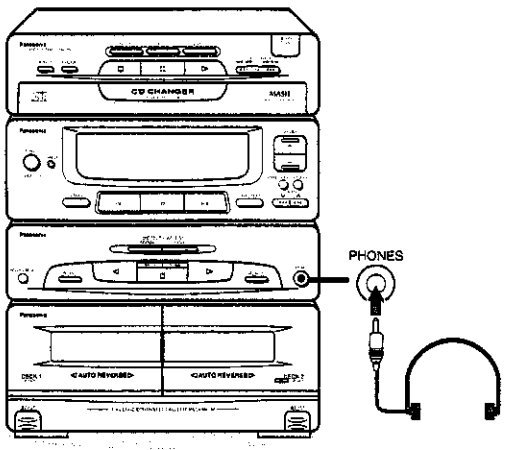
To briefly interrupt recording:

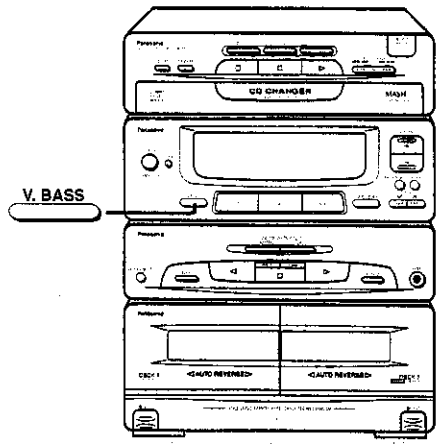
Press REC PAUSE.

The cassette deck will go into the recording standby mode.

To resume recording, press ► or ◄ corresponding to the direction in which recording is taking place.

Changing the Tone





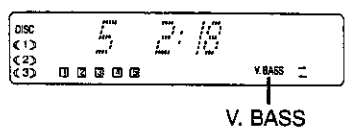
To use headphones

Connect the headphones (not included) to the headphones jack.
Before connecting, reduce the volume level.

- Avoid listening for prolonged periods of time to prevent hearing damage.
- Plug type: Stereo mini

To listen with augmented bass (V. BASS)

Press V. BASS.
"V. BASS" will light.

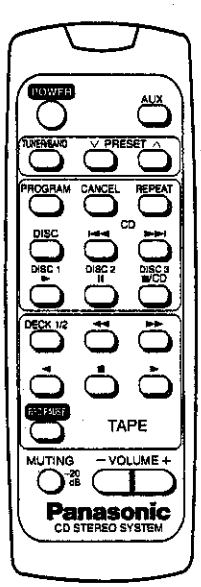


To cancel the V. BASS effect:
Press V. BASS once again.
"V. BASS" will go off.

Note

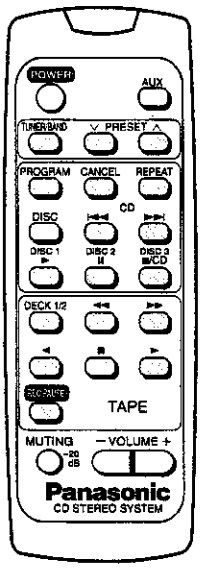
You cannot record with the V. BASS effect. V. BASS is effective only to the playback sound.

Quick Reference of Remote Control Operations



Common Operation	
Switching the system on and power standby mode	POWER
Starting play directly from the power standby condition	TUNER/BAND, DISC 1 ►, TAPE ◄, TAPE ►
Selecting the input source	TUNER/BAND, DISC 3 ■/CD, ■
Selecting the external source	AUX
Adjusting the volume	– VOLUME +
Muting the volume temporarily	MUTING -20 dB

Quick Reference of Remote Control Operations



Compact disc section	
Starting play	DISC 1 ▶
Temporarily stopping play	DISC 2 ⏸
Stopping play	DISC 3 ■/CD
Skipping tracks	⏮ ⏭
Repeating tracks	REPEAT
Playing the particular track you programmed	DISC 3 ■/CD → PROGRAM → DISC → DISC 1 ▶ → DISC 2 ⏸ → DISC 3 ■/CD DISC 1 ▶ ← PROGRAM ← ⏮ ← ⏭
Cancelling the particular track you programmed	CANCEL → DISC → DISC 1 ▶ → DISC 2 ⏸ → DISC 3 ■/CD CANCEL ← CANCEL ← ⏮ ← ⏭
Tape operation	
Switching between deck 1 and deck 2	DECK 1/2
Starting playback	◀ ▶
Finding the beginning of a track	During playback ◀◀ ▶▶
Fast forwarding or rewinding the tape	In the stop condition ◀◀ ▶▶
Stopping playback and recording	■
Recording	REC PAUSE ➡ ◀ ▶
Tuner operation	
Listening to radio broadcasts	TUNER/BAND ➡ ∨ PRESET ∧

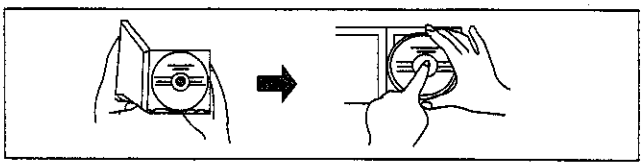
Concerning Compact Disc

Only compact disc having this mark can be used with this unit.

COMPACT disc DIGITAL AUDIO

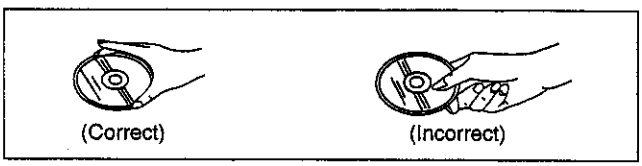
To remove a disc from its case

Press the center holder and lift the disc holding by the edges.



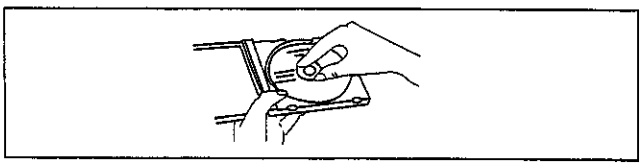
To hold the disc

Hold the disc by the edges so the surface is not soiled with fingerprints.
Fingerprints, dirt and scratches can cause skipping and distortion.



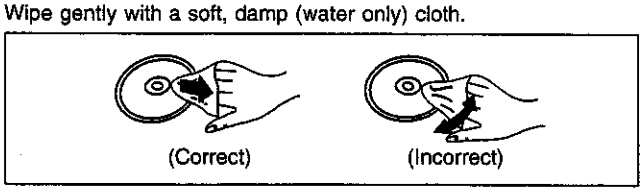
To store a disc in its case

Insert the disc with label facing upwards and press downward at the center.



If the surface is soiled

Wipe gently with a soft, damp (water only) cloth.



If the disc is brought from a cold to warm environment, moisture may form on the disc

Wipe this moisture off with a soft, lint-free cloth before using the disc.

Improper disc storage:

You can damage disc if you store them in the following places:
- Areas exposed to direct sunlight
- Humid or dusty areas
- Areas directly exposed to a heat outlet or heating appliance

Handling precautions:

- Do not write on the label side with a ball-point pen or other writing utensils.
- Do not use record cleaning sprays, benzene, thinner, static electricity prevention liquids or any other solvent.
- Do not soil with fingerprints.

Concerning Cassette Tape

Selection of cassette tapes

You can use normal and chrome tapes for recording:
- The deck automatically identifies the kind of tape loaded, and sets the bias (for recording) and equalization accordingly.
- The deck automatically sets the recording level.

Cassette tape exceeding 90 minutes:
These tapes are handy for their long playback and recording time but be careful about repeatedly stopping, starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the deck mechanism.

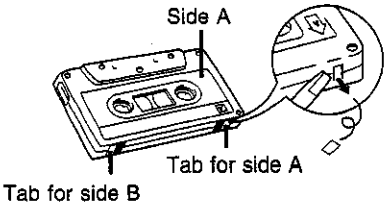
Do not use Fe-Cr tapes (TYPE III) in this system:
If you use this tape, it is impossible to obtain the required flat frequency response.

If the tape loosen, take up the slack

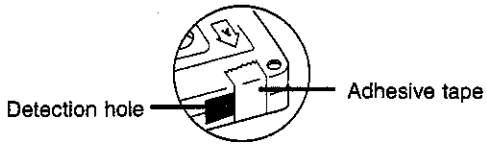
Tape slack may cause the tape to break.

To prevent erasure of recorded sounds

Remove the tabs with a screwdriver or a similar object.



To re-record on a protected cassette, cover the slot with adhesive tape.



Do not cover the detection holes on chrome tape.

Improper tape storage:
You can damages tapes if you store them in the following places:
- In high temperature (35°C or higher) or high humidity (80% or higher) areas
- In a strong magnetic field (near a speaker, on top of a TV, etc.) This can erase a recording.
- Areas exposed to direct sunlight

Maintenance

Maintenance of external surfaces

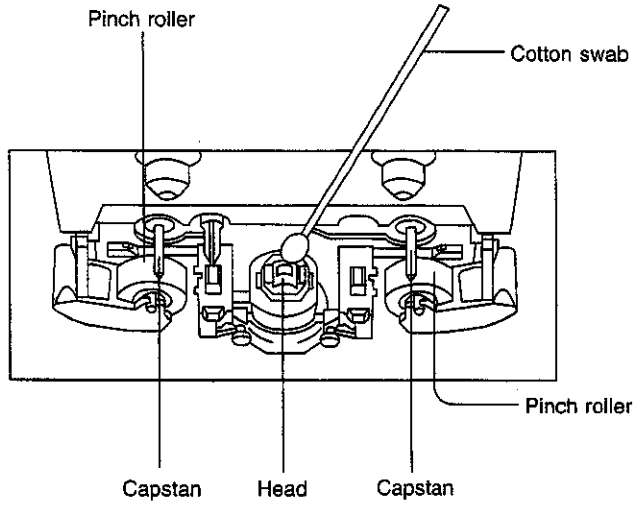
To clean this unit, use a soft, dry cloth.
If the surfaces are extremely dirty, use a soft cloth dipped in a soap-and-water solution or a weak detergent solution.

Wiring the cloth well before wiping the unit.
Wipe once again with a soft, dry cloth.
Never use alcohol, paint thinner, benzine, or chemically treated cloth to clean this unit. Such chemicals may damage the finish of your system.

Tape head care

To assure sound quality for recording and playback, be sure to clean the tape heads after approximately every 10 hours of use.

1 **Press POWER to switch the system to the power standby condition.**
2 **Press ⏏ EJECT to open the cassette holder.**
3 **Clean the tape heads, pinch rollers and the capstan shafts with a cotton swab (or a soft, lint-free cloth) slightly moistened with isopropyl alcohol.**
Do not use any solution other than alcohol for head cleaning



Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.
If you are in doubt about some of the check point, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, consult your dealer for instructions.

Problem	*Probable cause(s)*	*Suggested remedy*
Problems common to all systems		
There is no sound when the power is ON.	Volume is set too low.	Adjust the volume level with the volume control button.
The location of the various musical instruments is not well defined.	The (+) and (–) connections to one of the speaker are reversed.	Connect the speaker cord correctly.
The left and right sounds are reversed.	The left and right connections to the speakers are reversed.	Connect the speaker cords correctly.
When listening to the external unit, the left and right sounds are reversed.	The left and right connections to the external unit are reversed.	Connect the external unit's cord correctly
A low-frequency hum is heard during play	Power cord or fluorescent light is near a connecting cord.	Keep electrical appliances well away from the connecting cords. Try unplugging the power cable and re-connecting it with its polarities reversed.
Only one speaker is emitting sound.	One of the wires of the speaker cord is disconnected.	Connect the speaker cord correctly.
There is no sound when a source is being played	The (+) and (–) wire of the speaker cords are shorted.	Switch the system to the standby mode, and reconnect the speaker cords so that they are not shorted. Then switch on the power.
"ERROR" message appears on the display.	Wrong operation has been done.	Operate the unit correctly by following the operating instructions.
While listening to FM broadcasts		
There is a "rushing noise" during a stereo broadcast which is not audible during a monaural broadcast.	The transmitting station is along distance away.	If you are using an indoor antenna, change to an outdoor antenna.
You hear excessive noise during a stereo broadcast, and occasionally the sound disappears.	The installation location and orientation of the antenna are unsuitable.	
"STEREO" indicator flickers and does not light completely.	The transmitting station is a long distance away.	
	The power of the TV set or VCR is ON.	Try switching off the TV set or VCR.
The sound during a stereo broadcast is highly distorted.	There is a building or mountain nearby. [Distortion is caused by interference between the signal from the transmitting station (direct wave) and the signal reflected from the building or mountain (reflected wave).]	Use a high-grade outdoor antenna, and install it in a good location, height, and orientation for reception.
While listening to AM broadcasts		
You hear an unusual beat sound.	You are using the system at the same time you are playing a TV set.	Switch off the TV set, or use the system further away from it.
You hear a low-frequency hum.	The antenna wire is near the power cord.	Separate the antenna wire from the power cord.

Problem	*Probable cause(s)*	*Suggested remedy*
When there is a television set nearby		
The picture on the TV disappears or stripes appear on the screen.	The location and orientation of the antenna are incorrect.	If you are using an indoor antenna, change to an outdoor antenna.
	The wiring at the back of the system is unsuitable.	Separate the antenna wire of the TV set from the system.
While listening to tape		
Sound is low, intermittent, or poor quality, noisy, scratchy, or unsteady.	Heads are dirty.	Clean the heads.
	Heads have become magnetized.	Use a head degausser available from audio store to demagnetize the heads.
The deck does not enter the recording mode	The tabs are removed from the cassette.	Attach tape to cover the space left by removal of the erase-prevention tabs.
While listening to compact disc		
Loading drawer does not close even when disc are loaded and ⏏ OPEN/CLOSE button is pressed.	Disc is not loaded properly on the tray.	Load the disc again.
The display will not change. Disc play does not start when you press the play (►) button.	The disc is not positioned correctly in the disc tray.	Load the disc on the tray correctly.
	The disc is loaded upside down.	Reload the disc.
	The disc is dirty.	Wipe the disc with a soft cloth.
	The disc is scratched.	Replace the disc with a new one.
	The disc is badly warped.	
	The disc is a nonstandard one.	Replace the disc with a different one.
	There is condensation inside the compact disc changer.	Switch the power ON, and then wait for 60 minutes before using the compact disc changer.
Certain parts of the disc do not work.	The disc is dirty.	Wipe the disc with a soft cloth.
While using the remote control		
The system cannot be operated with the remote control.	The batteries are installed in the reverse polarity.	Re-insert the batteries observing the correct polarity.
	The batteries are worn out.	Replace the batteries with new batteries.

Technical Specifications

AMPLIFIER SECTION

Rated minimum sine wave RMS power output 70 Hz–20 kHz both channels driven 10% total harmonic distortion 2×5 W (4Ω)

Total harmonic distortion
Half power at 1 kHz 0.7% (4Ω)

Input sensitivity
AUX 250 mV

Input impedance
AUX 92 kΩ

Load impedance 4Ω

FM TUNER SECTION

Frequency range
87.5–108.0 MHz (100 kHz steps)

Sensivity 23.3 dBf (4.0μV, IHF '58)

Total harmonic distortion
MONO 0.4%
STEREO 0.5%

S/N
MONO 60dB (65dB, IHF)

Frequency response
40 Hz–15 kHz (+0.5 dB, –2dB)

Image rejection at 98MHz 47 dB

Stereo separation at 1 kHz 31 dB

Antenna terminal(s) 75Ω (unbalanced)

AM TUNER SECTION

Frequency range 522–1611kHz (9 kHz steps)

Sensitivy
(for 50mW) 141μ V/m
(S/N 20 dB) 446μ V/m

Image rejection at 999 kHz 37 dB

CASSETTE DECK SECTION

Track system 4 track, 2 channel

Heads
Playback Solid permalloy head
Record/playback Solid permalloy head
Erasure Double gap ferrite head

Motor DC servo motor

Recording system AC bias 100kHz

Erasing system AC erase 100kHz

Tape speed 4.8 cm/sec (1⅞ ips)

Frequency reponse
NORMAL 40 Hz–12 kHz (±3 dB)

Wow and flutter 0.1% (WRMS)

Fast forward and rewind times
Approx. 120 seconds with C-60 cassette tape

CD SECTION

Sampling frequency 44.1kHz

Decoding 16 bit linear

Beam source/wave length
Semiconductor laser/780 nm

Number of channels 2 Ch, Stereo

Frequency response
20 Hz–20kHz (+1, –2 dB)

S/N 90 dB (JIS.A)

Wow and flutter Below measurable limit

Digital filter 4 time over sampling

D/A converter MASH (1 bit DAC)

SPEAKER SECTION

Type 1 way closed

Speaker(s)
Full range 12 cm cone type

Impedance 4Ω

Input power 12 W (music)
6 W (DIN)

Output sound pressure level
90dB/W (1.0m)

Frequency range
68 Hz–20 kHz (–16 dB)

Dimensions (W×H×D)
201.5×345×192 mm

Weight 2.75 kg (6 lb.)

General

Power consumption 43 W

Power supply AC 230-240 V, 50 Hz

Dimensions (W×H×D)
270×345×308.5 mm

Weight 6 kg (13.2 lb.)

Notes:

1. Specifications are subject to change without notice
   Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

MASH is trademark of NTT.

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